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Amendment and Response
Applicant(s): Yates et al.
Serial No.: 10/770,797
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For: COMPOSITIONS AND METHODS FOR REMOVING ETCH RESIDUE

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-25. **(Canceled)**

26. **(Canceled)**

27. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition comprising:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition and is free of ~~includes no more than about 3 wt-%~~ water.

28. **(Original)** The composition of claim 27 wherein the fluoride ion source includes F^- ions or HF_2^- ions.

29. **(Original)** The composition of claim 27 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

30. **(Original)** The composition of claim 27 wherein the fluoride ion source includes a quaternary ammonium fluoride.

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31. **(Original)** The composition of claim 27 wherein the composition is in contact with a substrate having an etch residue on at least one surface.

32. **(Original)** The composition of claim 31 wherein the etch residue comprises polymeric etch residue.

33. **(Original)** The composition of claim 31 wherein the composition is effective to remove at least a portion of the etch residue.

34. **(Original)** The composition of claim 27 wherein the composition is in contact with a semiconductor structure having an etch residue on at least one surface.

35. **(Original)** The composition of claim 34 wherein the composition is effective to remove at least a portion of the etch residue.

36. **(Original)** The composition of claim 27 wherein the composition is in contact with a semiconductor structure having an etch residue on at least a portion thereof and comprising a layer comprising at least a portion of exposed metal.

37. **(Original)** The composition of claim 36 wherein the composition is effective to remove at least a portion of the etch residue and substantially none of the exposed metal.

38. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition comprising:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition effective to remove etch residue and is free of water.

39. **(Original)** The composition of claim 38 wherein the fluoride ion source includes F^- ions or HF_2^- ions.

40. **(Original)** The composition of claim 38 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

41. **(Original)** The composition of claim 38 wherein the fluoride ion source includes a quaternary ammonium fluoride.

42. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition consisting essentially of:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition.

43. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 1.0 wt-%.

44. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.5 wt-%.

45. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.1 wt-%.

46. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.01 wt-%.

47. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition consisting of:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition.

48. **(Original)** The composition of claim 47 wherein the fluoride ion source includes F^- ions or HF_2^- ions.

49. **(Original)** The composition of claim 47 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

50. **(Original)** The composition of claim 47 wherein the fluoride ion source includes a quaternary ammonium fluoride.